

IN THE CLAIMS

Please amend the claims as indicated in the following listing of claims, which replaces all previous listings of claims.

1. (Currently Amended) A method for maintenance of an undifferentiated stem cell, said method comprising culturing exposing the stem cell to in a cell culture comprising Activin A, or exposing the stem cell to Activin A in combination with a member of the fibroblast growth factor (FGF) family of proteins, nicotinamide (NIC), or both, wherein the Activin A, FGF family member, and NIC are provided in an amount sufficient to maintain the stem cell in an undifferentiated state for a sufficient amount of time to achieve a desired result.
2. (Cancelled)
3. (Currently Amended) The method of claim 1, wherein the method the cell culture further comprises exposing said cell to a TGF β family member, an FGF a fibroblast growth factor (FGF) family member, nicotinamide (NIC), or both and NIC.
4. (Cancelled)
5. (Currently Amended) The method of claim 3, wherein the FGF family member is keratinocytegrowth factor (KGF).
6. (Original) The method of claim 1, wherein said exposing results in growth of said cell.
7. (Original) The method of claim 1, where said exposing is repeated at least one time.
8. (Original) The method of claim 1, wherein said stem cell is a mammalian stem cell.
9. (Original) The method of claim 1, wherein said stem cell is a human stem cell.
10. (Original) The method of claim 1, wherein said stem cell is an embryonic stem cell.

11. (Currently Amended) The method of claim 1, wherein the ~~desired result comprises culturing said stem cell~~ is cultured for ten passages or more.
12. (Currently Amended) The method of claim 1, wherein the ~~desired result comprises culturing said stem cell~~ is cultured for thirty passages or more.
13. (Cancelled).
14. (Previously Presented) The method of claim 1, wherein the Activin A shows 80% or greater sequence identity with SEQ ID NO:1.
15. (Previously Presented) The method of claim 1, wherein the Activin A shows 90% or greater sequence identity with SEQ ID NO:1.
16. (Previously Presented) The method of claim 1, wherein the Activin A shows 95% or greater sequence identity with SEQ ID NO:1.
17. (Previously Presented) The method of claim 1, wherein the Activin A shows 99% or greater sequence identity with SEQ ID NO:1.
18. (Previously Presented) The method of claim 1, wherein the FGF family member shows 30% or greater sequence identity with SEQ ID NO:17.
19. (Previously Presented) The method of claim 1, wherein the FGF family member shows 80% or greater sequence identity with SEQ ID NO:17.
20. (Previously Presented) The method of claim 1, wherein the FGF family member shows 90% or greater sequence identity with SEQ ID NO:17.
21. (Previously Presented) The method of claim 1, wherein the FGF family member shows 95% or greater sequence identity with SEQ ID NO:17.

22. (Previously Presented) The method of claim 1, wherein the FGF family member shows 99% or greater sequence identity with SEQ ID NO:17.
23. (Previously Presented) A composition comprising
 - a) a culture medium and
 - b) Activin A in combination with an FGF family member, NIC, or both of these.
24. (Cancelled)
25. (Original) The composition of claim 23, wherein the FGF family member is KGF.
26. (Original) The composition of claim 23, further comprising a stem cell.
27. (Original) The composition of claim 26, wherein said stem cell is a mammalian stem cell.
28. (Original) The composition of claim 26, wherein said stem cell is a human stem cell.
29. (Original) The composition of claim 26, wherein said stem cell is an embryonic stem cell.
30. (Cancelled) .
31. (Previously Presented) The composition of claim 23, wherein the Activin A shows 80% or greater sequence identity with SEQ ID NO:1.
32. (Previously Presented) The composition of claim 23, wherein the Activin A shows 90% or greater sequence identity with SEQ ID NO:1.
33. (Previously Presented) The composition of claim 23, wherein the Activin A shows 95% or greater sequence identity with SEQ ID NO:1.
34. (Previously Presented) The composition of claim 23, wherein the Activin A shows 99% or greater sequence identity with SEQ ID NO:1.
35. (Original) The composition of claim 23, wherein the FGF family member shows 30% or greater sequence identity with SEQ ID NO:17.

36. (Original) The composition of claim 23, wherein the FGF family member shows 80% or greater sequence identity with SEQ ID NO:17.
37. (Original) The composition of claim 23, wherein the FGF family member shows 90% or greater sequence identity with SEQ ID NO:17.
38. (Original) The composition of claim 23, wherein the FGF family member shows 95% or greater sequence identity with SEQ ID NO:17.
39. (Original) The composition of claim 23, wherein the FGF family member shows 99% or greater sequence identity with SEQ ID NO:17.
40. (Previously Presented) A composition comprising a) purified Activin A, b) at least one purified FGF family member protein, and c) purified NIC.
41. (Previously Presented) The composition of claim 40, further comprising at least one stem cell.
42. (Original) The composition of claim 41, wherein the stem cells are mammalian stem cells.
43. (Original) The composition of claim 41, wherein the stem cells are human stem cells.
44. (Original) The composition of claim 41, wherein the stem cells are embryonic stem cells.
45. (Cancelled).
46. (Original) The composition of claim 41, wherein the FGF family member is KGF.
47. - 60. (Cancelled)
61. (Currently Amended) A method for maintenance of an undifferentiated stem cell, said method comprising:
exposing a culturing the stem cell in a cell culture comprising to (i) Activin A or (ii) Activin A in combination with a member of the fibroblast growth factor (FGF) family of proteins,

nicotinamide (NIC), or both, in an amount sufficient to maintain the stem cell in an undifferentiated state for a sufficient amount of time to achieve a desired result, wherein the cell culture does not comprise the stem cell is not also exposed to a feeder cell, conditioned media, or leukemia inhibitory factor.

62. (Previously Presented) The composition of claim 23, wherein said composition does not comprise feeder cells, conditioned media, or LIF.
63. (Cancelled)
64. (Cancelled)
65. (Previously Presented) A pharmaceutical composition comprising a stem cell grown or maintained by a method comprising exposing a stem cell to Activin A or Activin A in combination with a member of the fibroblast growth factor (FGF) family of proteins, nicotinamide (NIC), or both, in an amount sufficient to maintain the cell in an undifferentiated state.
66. (Cancelled).